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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/644,037  | 08/20/2003  | Harald Rose          | 01016               | 5076             |
| 7590  | 02/17/2004  |                      | EXAMINER            |                  |
| Walter Ottesen<br>Patent Attorney<br>P.O. Box 4026<br>Geithersburg, MD 20885-4026 |             |                      | FERNANDEZ, KALIMAH  |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2881                |                  |

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                   |              |  |
|------------------------------|-------------------|--------------|--|
| <b>Office Action Summary</b> | Application No.   | Applicant(s) |  |
|                              | 10/644,037        | ROSE ET AL.  |  |
|                              | Examiner          | Art Unit     |  |
|                              | Kalimah Fernandez | 2881         |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                      | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                             | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8-20-03</u> | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2,6, and 11-18 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,319,207 issued to Rose et al.
3. Rose et al disclose a particle beam system (col.1, lines 5-8).
4. Rose et al disclose a particle source (1) (col.5, lines 15-19).
5. Rose et al disclose an objective lens (10) defining a diffraction plane (col.4, lines 61-63).
6. Rose et al disclose a mirror corrector unit (col.4, lines 36-43).
7. Rose et al disclose the mirror corrector unit includes deflector (3, 110) and an electrostatic mirror (5) (see fig.1).
8. Rose et al disclose the deflector (3, 110) is free of dispersion for each single passthrough (col.7, lines 67-68;col.8, lines 54-56).

9. Rose et al disclose the deflector having a plurality of quadrupoles (112,113,114) (col.2, lines 60-64; col.8, lines 56-64; col.9, lines 15-21).
10. Rose et al disclose two planes occur conjugated to the diffraction plane of the objective lens (col.2, lines 48-50; col.8, lines 5-10).
11. As per claim 2, Rose et al disclose the diffraction plane imaged into the mirror plane (col.4, lines 11-35).
12. As per claim 6, Rose et al disclose the deflector effects a deflection symmetrical to a first symmetry plane in a first region thereof and a deflection symmetrical to a second symmetry plane in a second region thereof (col.9, lines 10-16).
13. As per claims 11 and 13, Rose et al disclose stigmatically focusing by condenser/ stigmator (col.4, lines 28-30).
14. As per claim 12, Rose et al disclose a hexapole (col.7, lines 61-66).
15. As per claims 14-16, Rose et al disclose a field lens (13) (col.4, lines 29-34) and a field lens (17) (col.4, lines 61-63).

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al '207 and in view of US Pat No 6,239,430 issued to Weimer et al.

18. Rose et al disclose claimed invention except that for condenser lens instead of immersion lens, Weimer et al shows that an condenser lens can be constructively an immersion lens and is an equivalent structure known in the art (col.6, lines 5-9 of Weimer et al). Therefore, because these two lens were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a condenser lens for an immersion lens.

19. An ordinary artisan would have obvious motivation to substitute the lens as above-mentioned since the obvious advantage of improved magnification of the image (see also col.6, lines 9-15 of Weimer et al).

20. Claims 3-5, 7-10, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al.

21. Rose et al disclose the claimed invention except for at least three outer magnetic sectors.

22. Rather, Rose et al teach at least two outer magnetic sectors and at least three inner magnetic sectors (col.8, lines 54-60). It would have been obvious to an ordinary artisan to add an additional outer magnetic sector since the addition would achieve the obvious advantage of improved control of the magnetic field.

23. As per claim 4, Rose et al teach anti-parallelism (col.3, lines 33-36).

24. As per claim 5, Rose et al teach a magnetic deflector (col. 5, lines 20-38).

25. As per claim 7, Rose et al teach magnetic field free spaces (col.7, lines 1-5).

26. As per claim 8, Rose et al teach the entry and exit edge of the deflector in the optical axis (see fig. 1).

27. As per claim 9, Rose et al teach single passthrough free of dispersion (col.8, lines 54-56).

28. As per claim 10, Rose et al teach equal magnitude field (col.3, lines 33-36).

29. As per claim 19, Rose et al teach the recited deflector arrangement (see fig. 1) and a scanning electron microscope, which notoriously contains a detector in order to function (col.2, lines 51-55).

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Pat No 3,660,658 issued to Leboutet et al, US Pat No. 2,161,466 issued to Henneberg et al, US Pat No. 6,611,087, US pat No 4,367,406 issued to Franzen et al, and US Pat No 4,107,526 issued to McKinney et al is considered relevant to the claimed invention. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 703-305-6310. The examiner can normally be reached on Mon-Thurs between 7:00am-4:30pm.

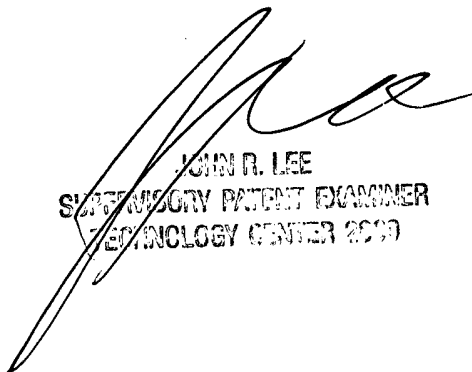
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 703-308-4116. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kf



JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000